

DRUG DISCOVERY

Rumex crispus L. – a plant of traditional value

Archana Pareek¹, Ashwani Kumar²✉

1. Department of Botany, Vedic Kanya P G Girls College, Jaipur, India

2. Department of Botany, University of Rajasthan, Jaipur 302004, India

✉Correspondence to: Department of Botany, University of Rajasthan, Jaipur 302004, India; Email: Ashwanikumar214@gmail.com

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ABSTRACT

Wetlands are areas of standing water that support aquatic plants & provide a unique habitat for several plant of economic importance. Present papers deal some of the traditional values of *Rumex crispus L.* (family polygonaceae) a wetland plant by local community of India. This paper is first report from the Rajasthan.

Key word: Wet lands, Aquatic, traditional, Polygonaceae

1. INTRODUCTION

Studies on traditional Indian Ayurvedic Medicines and some potential plants for bioenergy, medicine from India have recently attracted attention (Sharma et al., 2003; Verma et al., 2003a and b; Sharma and Kumar, 2005, Sharma et al., 2005; Sharma and Kumar 2006, 2007; 2011 Sharma and Kumar 2011a and b; Sharma and Kumar, 2012; Kumar and Sopory, 2008). Ethnobotanical studies on plants have been conducted in the Churu District in the Thar Desert (Parveen, et al., 2007); Eastern Rajasthan (Upadhyay et al., 2010), entire tribal region (Sharma and Kumar 2011); Baran District (Meena and Kumar, 2012) and wetlands of Rajasthan (Shreevastava and Kumar, 2007). Panda and Misra (2011) provided information about ethno medicinal uses of 48 wetland plant species of South Orissa and discussed their conservation. Geographically Rajasthan is an arid and semi-arid part of India. The annual normal rainfall of the State is 575 m.m., out of which 75 to 90% of rainfall mostly precipitates in the monsoon period. There are only two perennial rivers in Rajasthan, Chambal & Mahi though there are numerous seasonal rivers. The important palayas are confined to Western Rajasthan, including the Ramgar site of Sambhar Lake, other important are Deedwana, Rewosa, Kuchaman, Baramsar etc.

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Man made reservoirs are generally confined to the eastern part of the State and were necessitated by the ephemeral nature of water system. The prominent ones are Ranapratap Sagar Bundh, Rajsamand Lake, Sardarsamand etc. Although Rajasthan is considered desert State but it has rich aquatic flora and biodiversity. Out of an estimated 1500 species of plants in the state nearly one fifth are aquatics (Pareek, 1996, Razvy, 2011). Reports published exclusively on the aquatic plants of the State are not many (Pareek and Sharma, 1988). Some of the reports include Ajit Sagar bandh (Nair and Kanodia, 1959); Bharatpur (Sarup, 1961), Ghana bird sanctuary (Saxena, 1975); Alwar (Vyas, 1962); Kota (Gupta, 1966) Pareek (1994a, 1994b) carried out detailed investigations on several aquatic species from Rajasthan and also studied their medicinal properties. Shreevastava and Kumar (2007) characterized wetlands of Rajasthan as potential source for cultivation of medicinal plants. Though the aquatic situations of India are rich repositories of various plant species, not much work has been undertaken to enumerate the medicinal uses of them.

2. MATERIAL AND METHOD

The samples of selected plants were collected from different parts of Rajasthan from water bodies and marshy areas. For the study of medicinal property of wetland plants frequent trips were made in wetland area, Bird sanctuary, lakes, ponds, puddles, ditches, canal, swamps etc. During the survey, plants occurring in different water saturated areas were collected, photographed and identified. Their nature of growth, habit, habitat and medicinal property were noted from local rural and tribal people of different area. To acquire detailed knowledge on the utilization of plant resources, old and experienced persons, village heads, and farmers were also contacted, besides making personal observation on spot; the species are identified with the help of relevant literatures and deposited in Herbarium, University of Rajasthan, Jaipur. Adventive perennial height 1–3', branched, except where the flowers occur. The seeds are nutlets, 0.2 cm long, trigonous, reddish-brown, smooth, shiny, and encased in the calyx of the flower that produced them. The rather large seeds are dark brown and 3-angled, tapering at their tips. The seeds can persist in the ground for several decades (at least 50 years) and remain viable. The root-structure is a large, yellow, forking taproot. Plants can contain quite high levels of oxalic acid, which is what gives the leaves of many members of this genus an acid-lemon flavour. Perfectly alright in small quantities, the leaves should not be eaten in large amounts since the oxalic acid can lock-up other nutrients in the food, especially calcium, thus causing mineral deficiencies. The oxalic acid content will be reduced if the plant is cooked. People with a tendency to rheumatism, arthritis, gout, kidney stones or hyperacidity should take especial caution if including this plant in their diet since it can aggravate their condition. Avoid during pregnancy & breast feeding.

3. USES

Edible

- a) **Leaves** - raw or cooked. They can also be dried for later use. The leaves can be added to salads, cooked as a potherb or added to soups. Only the very young leaves should be used, preferably before the stems have developed, and even these are likely to be bitter. If used in early spring and in the autumn they can often be fairly pleasant tasting. The leaves are very rich in vitamins and minerals, especially iron and the vitamins A and C. A nutritional analysis is available.
- b) **Stems** - raw or cooked. They are best peeled and the inner portion eaten.
- c) **Seed** - raw or cooked. It can be used as a piñole or can be ground into a powder and used as a flour for making pancakes etc. The seed is very fiddly to harvest and prepare. The roasted seed has been used as a coffee substitute.

Medicinal

(a) Allelopathy : Curled dock has a long history of domestic herbal use. It is a gentle and safe laxative, less powerful than rhubarb in its action so it is particularly useful in the treatment of mild constipation. The plant has valuable cleansing properties and is useful for treating a wide range of skin problems. All parts of the plant can be used, though the root is most active medicinally. The root is alterative, antiscorbutic, astringent, cholagogue, depurative, laxative and mildly tonic. It used to be sold as a tonic and laxative. It can cause or relieve diarrhoea according to the dose, harvest time and relative concentrations of tannin (astringent) and anthraquinones (laxative) that are present. It is used internally in the treatment of constipation, diarrhoea, piles, bleeding of the lungs, various blood complaints and also chronic skin diseases. Externally, the root can be mashed and used as a poultice and salve, or dried and used as a dusting powder, on sores, ulcers, wounds and various other skin problems. The root has been used with positive effect to restrain the inroads made by cancer, being used as an alterative and tonic. The root is harvested in early spring and dried for later use. Some caution is advised in its use since excess doses can cause gastric disturbance, nausea and dermatitis. The seed is used in the treatment of diarrhoea.

(b)Homeopathic

A Homeopathic remedy is made from the fresh root, harvested in the autumn before frost has touched the plant. It is only used in the treatment of a specific type of cough.

Other Uses

Yellow, dark green to brown and dark grey dyes can be obtained from the roots. They do not need a mordant. An alternative ingredient of 'QR' herbal compost activator. (is it the flowers?) This is a dried and powdered mixture of several herbs that can be added to a compost heap in order to speed up bacterial activity and thus shorten the time needed to make the compost [K]. The following are the strongest indications of *Rumex Crispus* for its use in homeopathy. It is characterized by pains, numerous and varied, neither fixed nor constant anywhere. Cough caused by an incessant tickling in the throat-pit, which tickling runs down to the bifurcation of the bronchial tubes. Touching the throat-pit brings on the cough. Worse from the least cold air; so those all cough ceases by covering up all the body and head with the bedclothes. *Rumex* diminishes the secretions of mucous membranes, and at the same time exalts sensibility of the mucous membranes of the larynx and trachea. Its action upon the skin is marked, producing an intense itching. Lymphatics enlarged and secretions perverted. Worse, in evening, from inhaling cold air; left chest; uncovering.

4. DISCUSSION

Although several studies have been conducted on medicinal plants of Rajasthan but studies on aquatic medicinal plants are lacking (Pareek, 1989). Aquatic species are not so widely spread as the terrestrial species and work on aquatic medicinal plants is lacking. Aquatic ecosystems are important one which provide livelihoods for the millions of people who live around them. Man depends ponds for most of his needs like fishing, agriculture, irrigation, and other domestic purposes. Ponds are playing a very good role in rain harvesting, storage of water and regulation of ground water level. So in order to maintain the ground water level we must conserve ponds and pond habitat. Therefore, Conservation of wetlands will be addressed urgently. Wetlands also provide an excellent habitat for several species of plants; local people use a wide variety of wetland and associated plants as ingredients of traditional herbal medicine. Often the information on the composition of a specific medical preparation or the knowledge on the use and medical value of a particular plant is restricted to a few members of a community or even to one or two individuals of a household since most of this vial system of knowledge is transmitted orally, the local extinction of plant results in the gradual loss of knowledge related with a medicinal value of such species. The knowledge of medicinal property of plants has been accumulated in the course of many centuries. The local inhabitants have inherited rich traditional knowledge on the use of many plants or plant parts for treatment of common disease. Medicinal plant provides accessible and culturally relevant sources of primary health care, the remedies based on these plants often have minimal side effect. The medicinal values of a particular species of plant differ from one locality to another or from one community to another. Hence it is highly imperative to document local knowledge on the medicinal properties of plants to gain wider and in-depth knowledge on their curative abilities. It is well known that global wetlands are shrinking rapidly and hence their resources both plant and animal are depleting in the same place. The survival of aquatic species is threatened and hence the study on the aquatic resources especially those having medicinal value are important. Wetlands not only provide useful resources but are also important in terms of ecology and maintaining the climate of the region.

5. CONCLUSION

Each and every plant in the world is useful in some way or other. Earlier, the plants are utilized based on the "Doctrine of Signature" that is God wood mark or sign each plant in some way or the other to indicate its medicinal property. Cook (1996) in his aquatic and wetland plants of India gave some short notes on the utility of the plants. The present work describes the edible, medicinal & other uses of aquatic plant species in Rajasthan. Present study reveals that the plants can be effectively utilized for their food and medicine attributes & other uses which are useful for mankind. The nutritive values of some of the plants have been studied by various authors and the present work emphasize the usefulness of the Aquatic plants wealth which in turn may form another criteria to conserve the delicate ecosystems considering the services they provide to the mankind.

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